



TPCP

Tobacco Prevention & Cessation Program

Pregnancy Incentive Pilot

Jonesboro-Blytheville
Intermediate six month review

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EXECUTIVE SUMMARY

The Arkansas Department of Health Tobacco Prevention & Cessation Program is conducting a pilot program in which pregnant women who smoke are paid cash to quit smoking. This report provides a look at the first six months of implementation, results, and recommendations. The program was implemented on August 23, 2010, and enrolled its first participant on September 1, 2010. To date, 354 pregnant women were seen in the two health units; 57 pregnant women who smoke have been offered the opportunity to enter the program, 26 have enrolled, nine (9) are currently enrolled, with (5) of those staying quit for three (3) months or greater and two (2) staying quit at least the last month (30 days). In evaluating the cost, taking into account only the five (5) who have stayed quit for more than three (3) months, the program's cost to quit is \$535 per smoker, compared to the Arkansas Tobacco Quitline cost of \$443 per smoker. It is recommended that the Pregnancy Incentive Pilot Program continue through the end of the 2011 fiscal year, during which time other sources of funding for its long-term sustainability should be investigated.

PLAN

1. Purpose

Arkansas has one of the highest smoking prevalence rates in women who are pregnant in the country. According to the 2008 birth certificate data, Arkansas has a 15.3% smoking rate among pregnant women. In addition, Arkansas has one of the highest teenage pregnancy smoking prevalence rates in the country. According to the 2008 PRAMS, Arkansas ranked 5th highest among 29 other participating states. Women who smoke during their pregnancies incur significant adverse outcomes from increased miscarriages, to low birth weight babies, to higher infant mortalities and further neonate and infant morbidities in the developing child. Helping women to stop smoking before, during and after pregnancy is a high priority not only for the health of the woman, but for the child.

2. Derivation

Incentive-based reinforcement therapy (IBRT) has a growing evidence base that incentivizing women to stop smoking during pregnancy is successful at much higher rates than other interventions. Arkansas took the concept, evaluated in Vermont, and implemented a pilot program in health units in Arkansas serving low resourced pregnant women who smoke.

3. Quality criteria

The pilot sites were chosen for ease of program implementation in order to determine Arkansas specific needs as the program may grow for state-wide implementation. The pilot program was offered to all health units across the state with Craighead and Mississippi County Health Units volunteering to be the pilot sites. Based on 2008 birth certificate data, both locations served a good baseline of pregnant women (18.9% & 19.2% respectively). These units were also participants in the TB Incentive Fund testing program which has a similar cash reimbursement system.

4. Tailoring (any changes we made to adjust for success)

The procedures for incorporating the Pregnancy Incentive Program were developed around the uniqueness of how each health unit currently operated, while minimizing drastic changes. Each health unit had differences based on the clients they served and the personnel at the site. The following are the specific changes made for the pilot program.

- A base program procedure was developed showing the necessary steps to be taken, allowing each health unit to adjust for their location.
- Forms were created for documentation purposes such as: client tracking spreadsheet, appointment cards, and participation agreements.
- Urine cotinine and carbon monoxide (CO) testing guidelines were developed for ease of use and understanding.
- Cash distribution policy and procedures.
 - A tobacco cessation cash-based reinforcement therapy incentive fund was requested and approved.
 - The Arkansas Department of Health Record of Expenditure/Replenishment Report form used in the TB Incentive Fund was used for tracking the distribution of incentives.
 - Safes purchased by TPCP to secure funds at each health unit.
- Surveys created for three stages of the program: initial enrollment, interim, and end of pregnancy.
 - All surveys accessed through Survey Monkey to increase efficiency in operation and reporting.
- Weekly conference calls established to facilitate an open dialogue on any changes and information sharing.
 - Periodic on-site visits scheduled to further deepen relationships between the health units and ADH TPCP and increase understanding of how each location operated.
- The Encounter Management system was updated by adding a Pregnancy Initiative field to the Manual Tally Screen. This was done to allow health unit personnel to properly document time spent with each participant in the program.

5. Plan Description

Women in the catchment area of the participating local health units (Craighead and Mississippi counties) were made aware of the incentive program at the time they were determined to be pregnant. This first visit could be at any time during a confirmed pregnancy. During their initial visit to the health unit, identified participants will continue as follows:

- Receive an information sheet concerning the requirements and benefits of the program at their first presentation at the local health unit.
- Receive a short counselling intervention to stop smoking by their care provider/nurse practitioner and requested that they enroll in the ATQ pregnancy program, which is an intensive counseling program that provides 10 counseling interventions.
 - The women, if agreeable, will be referred via the fax referral program to ATQ.
- Complete a short questionnaire that described their socio-demographics, current tobacco use, family tobacco use and current living situation, motivation, confidence and intention to quit.
- Provide a urine sample for baseline cotinine assessment and an exhaled carbon monoxide (CO) measurement.
- Set their quit date for the next approaching Monday. Return on Monday and provide a urine sample for cotinine and an exhaled carbon monoxide breath sample.
- The women will return again on Wednesday and Friday of the first week to provide a urine sample and carbon monoxide breath sample.

- The second week, the women will provide a urine sample on Monday and again on Thursday.
- The subsequent four weeks, the women will provide a urine sample once a week – preferably mid-week.
- Following this, the women will provide a urine sample every other Wednesday (or mid-week).
- Post-partum, the urine assessments will occur weekly, on Wednesdays for the initial four weeks and then every other week for eight additional weeks.
- The initial incentive is \$20 for enrolling into the program and providing a urine sample for baseline cotinine assessment and an exhaled carbon monoxide (CO) measurement.
 - o The cotinine level should be below 200ng/ml or a CO measurement below 6 ppm for a non-smoker who is also not exposed to secondhand smoke.
 - o The incentives will rise by \$1 for each urine cotinine (or CO measurement) that progressively declines from the previous cotinine level or, post two-week cessation, that is less than 80 ng/ml.
 - o The progressive increases will rise to a maximum limit of \$40 per negative urine.
- Relapse
 - o No incentive is given if a relapse occurs in the first two weeks of enrollment, or if participant has two consecutive positive urine tests.
 - o If a urine test is positive or an appointment is missed, the incentive will be brought back to \$20.
 - o After two consecutive negative urines, the value will return to the last higher value.

6. Plan Prerequisites

Plan implementation requires a local health unit with a reasonable estimate of pregnant women who are smokers. The personnel within the health unit must be enthusiastic about the program and supportive of pregnant women in helping them to stop smoking.

The participating health unit must be capable of receiving, securing and disbursing funds in accordance with Arkansas Department of Finance and Administration guidelines.

7. External Dependencies

The Pregnancy Incentive Program depends on the willingness of pregnant women who smoke to enroll and continue to attend regular scheduled appointments as required.

8. Planning Assumptions

Incentive-based reinforcement therapy (IBRT) has a growing evidence base that incentivizing women to stop smoking during pregnancy is successful at much higher rates than other interventions. Similar programs have demonstrated success in two other states so it is the assumption that a program in Arkansas will meet with success as well.

- The Ingham County Health Department in Michigan has a program called House Calls which incentivizes pregnant women who smoke to quit by providing a \$20 gift card for a smoke-free status.
 - o 102 clients enrolled with 28% reducing their CO level below six ppm.
 - o NACCHO 2011 Model Practice Award Winner.
- Kentucky has an incentive program known as GIFTS (Giving Infants & Families Tobacco Free Starts). This program incentivizes pregnant women to quit by providing gifts such as diapers, wipes and clothing.
 - o 332 pregnant women who smoke enrolled in the program with 60 (18%) having quit.

9. Lessons Incorporated

The Pregnancy Incentive Program is based on a concept that was evaluated using the University of Vermont research program, which started with an incentive base of \$6.25 and increased by one dollar (\$1) increments at each visit that had proof of decreased or stopped smoking.

The cash disbursement process used the same methods of the Arkansas Department of Health TB Incentive Fund.

10. Monitoring and Control

The program is monitored and controlled using the following methods.

- Individual client tracking forms
- Overall Health Unit tracking spreadsheet
- Record of Expenditure/Replenishment form
- Weekly conference calls
- Periodic on-site visits
- Monthly reporting/updates

11. Budgets

Budget	\$50,000.00		Start-up Costs	\$2,922.08
Expenses to Date	\$5,741.57		Carbon Monoxide monitors-	\$2,671.70
Urine Strips-\$2,622.57			Safes-	\$297.38
Petty Cash to Health Units-\$3,119				
Balance	\$44,258.43			

12. Product Descriptions

Each participant is required to provide biochemical feedback to determine current smoking status. The following products are used:

Urine Test

The urine will be tested by NicQuick COT One Step Cotinine Test Device which is ideal for testing lower levels of nicotine exposure and is sensitive enough to determine secondhand smoke exposure. Urine does not need to be processed, nor does it need to be “first morning” or “mid-stream.” It does need to be clear and at room temperature. Three (3) full drops of urine are placed on the test device. COT One Step Cotinine Test Device gives pass/fail nicotine drug test results, indicated by colored lines, in five minutes. This provides confirmation if there has been nicotine use which has occurred within the last one to three days.

Carbon Monoxide (CO)

Breath carbon monoxide will be measured using a Bedfont Carbon Monoxide (CO) monitor. The patient will inhale as deeply as possible, hold breath for fifteen (15) seconds and exhale into monitor. Results will appear in less than one (1) minute indicating the level of carbon monoxide. CO has a half-life of about five to six hours and may remain in the blood for up to 24 hours, depending on factors such as gender, physical activity and inhalation intensity. A monitor reading chart is used to help determine the smoking status.

- o The Bedfont Carbon Monoxide monitor is required to be calibrated once every six months.

13. Timeline

- April 12, 2010—Prenancy Incentive Program was presented by Carolyn Dresler, MD at regional director's meeting
- May 26, 2010—Videoconference with staff who volunteered at both health units (Craighead and Mississippi counties)
- July 12, 2010—Training on program procedures conducted at the Craighead Health Unit in Jonesboro. 22 personnel were in attendance from both health units, including each unit's administrators and coordinators.
 - Training included the following topics: 1) Background history of cash/voucher-based reinforcement therapy. 2) Program eligibility requirements, enrollment and participant tracking. 3) Client questionnaires (surveys). 4) Arkansas Tobacco Quitline services. 5) Urine testing (conducted by Arkansas Public Health Lab). 6) CO monitor testing and calibration. 7) Cash disbursement. 8) Individual Health Unit's policy and procedures.
 - Group interaction provided opportunities for input and feedback to address questions and concerns.
- Transportation issues were noted as potential challenges to the program's participants.
- August 1, 2010—request for Tobacco Cessation Cash-based Reinforcement Therapy Fund submitted.
- August 17, 2010—pregnancy incentive field added to the Encounter Management System Manual Talley Screen.
- August 23, 2010—the program was implemented in the Craighead and Mississippi County Health Units.
- September 1, 2010—first participant enrolls in Mississippi County Health Unit.
- October 1, 2010—incentive increased to an initial payment of \$20 versus \$5 due to low participation rates and to address transportation issues.
- November 12, 2010—on-site visit to both health units to review records.
- February 18, 2011—on-site visit to both health units to review records and calibrate CO monitors.
- February 25, 2011—Six-month review will share report/outcomes with Craighead and Mississippi Health Units, Randy Lee and Andrea Ridgway.
 - Complete report of review and recommendations.
- June 30, 2011—end of fiscal year evaluation/review.

14. Program Summary

The program was implemented on August 23, 2010, and enrolled its first participant on September 1, 2010. To date, 354 pregnant women were seen in the two health units, 57 (16%) of these pregnant women smoked and were offered the opportunity to enter the program. During the first six-month period, 26 of the women enrolled, nine (9) are currently enrolled, with (5) of those staying quit for three (3) months or greater and two (2) staying quit at least the last month (30 days). All 26 of the enrolled participants were referred to the Arkansas Tobacco Quitline; however, only seven (7) of those enrolled followed up and only two (2) are currently active in the ATQ program.

As expected, many changes and updates had to take place. The effectiveness of the program depends heavily on the attitude of the health unit personnel. In this pilot program, all of the health unit personnel have shown exceptional enthusiasm, support and dedication. The success the program has experienced would not exist without their efforts.

Pregnancy Incentive Program Summary					
	Report Date: 2/25/11				
Program Offered	Participants Enrolled	Dropped	Total Currently Enrolled	Total Incentive Disbursed	
Craighead County					
22	13 (59%)	8 (62%)	5	\$ 1,296	
Mississippi County					
35	13 (37%)	9 (69%)	4	\$ 1,383	
57	26 (46%)	17 (65%)	9	\$ 2,679	
Quit (as of 2/25/11)			Quitline Usage (as of 2/25/11)		
3+ Months	1 Month		Referred	Enrollment	Active in PIP & ATQ
Craighead	Craighead		Craighead	Craighead	Craighead
2	2		7	2	1
Mississippi	Mississippi		Mississippi	Mississippi	Mississippi
3	0		12	5	1

15. Survey Outcomes / Demographics

The initial enrolment process required each participant to complete a short questionnaire that described their socio-demographics, current tobacco use, family tobacco use and current living situation, motivation, confidence and intention to quit. This questionnaire was completed through Survey Monkey and provided the following information.

- Demographics
 - **80.8%** (21) White
 - **15.4%** (4) Black/African-American
 - **3.8%** (1) Asian
 - **0%** Hispanic/Latino
- Average age: **24.5** years old
- Average age when smoking began: **14.7** years old
- Marital Status
 - **42.2%** (11) never married; not living with partner
 - **27.3%** (7) married and living with partner
 - **23.3%** (6) not married and living with a partner
 - **8.2%** (2) widowed, divorced, separated; not living with partner.
- When asked how smoking is handled in the home, **44%** allow smoking anywhere, while **41%** do not allow smoking at all. The other **11%** only allow smoking in certain areas.

- Average number of cigarettes smoked in the seven days prior to enrolling in program: **11**
- How soon after waking until the first cigarette?
 - o < 5 minutes: **19%** (5)
 - o 6 to 30 minutes: **50%** (13)
 - o 31 to 59 minutes: **8%** (2)
 - o 1 to 2 hours: **8%** (2)
 - o > 2 hours: **15%** (4)
- **82%** of medical bills to doctor, clinic or prenatal care were paid through Medicaid.
- Each participant had at least one (1) child prior to entering program.
- Four of the five who have quit for at least three months had at least one (1) relapse within the first month, while one did not relapse until the third month.
 - o All five were motivated to quit completely and continued the program after the relapse,
- The demographics of the two health units were relatively the same, with the exception of one Asian participant at the Craighead County Health Unit.
- **Presentation procedures**
 - o Craighead presents the program to the maternity clinic patients only. Due to limited personnel (two) and high caseload in WIC, the program is not offered during WIC visits.
 - Maternity clinic is on Monday.
 - o Mississippi presents the program at three (3) different points, 1) The initial pregnancy test, 2) Appointment to open record and get history—blood test and initial work-up, 3) WIC appointment.
 - Maternity clinic is on Tuesday or Wednesday depending on doctor's schedule.

16. Lessons Learned

- Program is effective for those who have a strong motivation to quit.
 - o Each of the five who have quit for at least three months had at least one relapse.
- The role of the health unit personnel is critical.
 - o Knowledge and experience of working with the target group.
 - o Support provided on the delicate issue of smoking while pregnant, especially in cases of relapse.
- Relationships that are established and nurtured during the process.
 - o This relationship has been significant in getting participants through periods of relapse.
- The program needs to address:
 - o The current family tobacco use and living situation's is necessary.
 - o Transportation issues in rural areas.
- 20 of the women either declined to enroll or quit the program due to a lack of transportation and/or the money for gas.

17. Pilot Recommendations

- Continue program through the end of fiscal year.
 - o Once beyond end of fiscal year, continue with any participants still enrolled according to program agreement through twelve weeks post-partum.
- Consider partnering Pregnancy Incentive Program with other cessation programs such as WIC to include mothers within the first twelve weeks of post-partum and to prevent relapse of those mothers who quit during pregnancy.
- Adding a peer support element with other participants.
- Evaluate methods to eliminate or reduce transportation issues by going to participant homes or meeting at a neutral, convenient or central location.

18. Pilot Recommendations

Name	Organization	Role
Carolyn Dresler, MD	Arkansas Dept of Health, Tobacco Prevention & Cessation Program	Director
Randy Lee	Center Local Public Health	Director
Andrea Ridgway	Center Local Public Health	Branch Chief
Craighead & Mississippi County Health Units	Local Health Units	Facilitators
Infant Mortality Workgroup	Children's Hospital	Action Group



Arkansas Department of Health